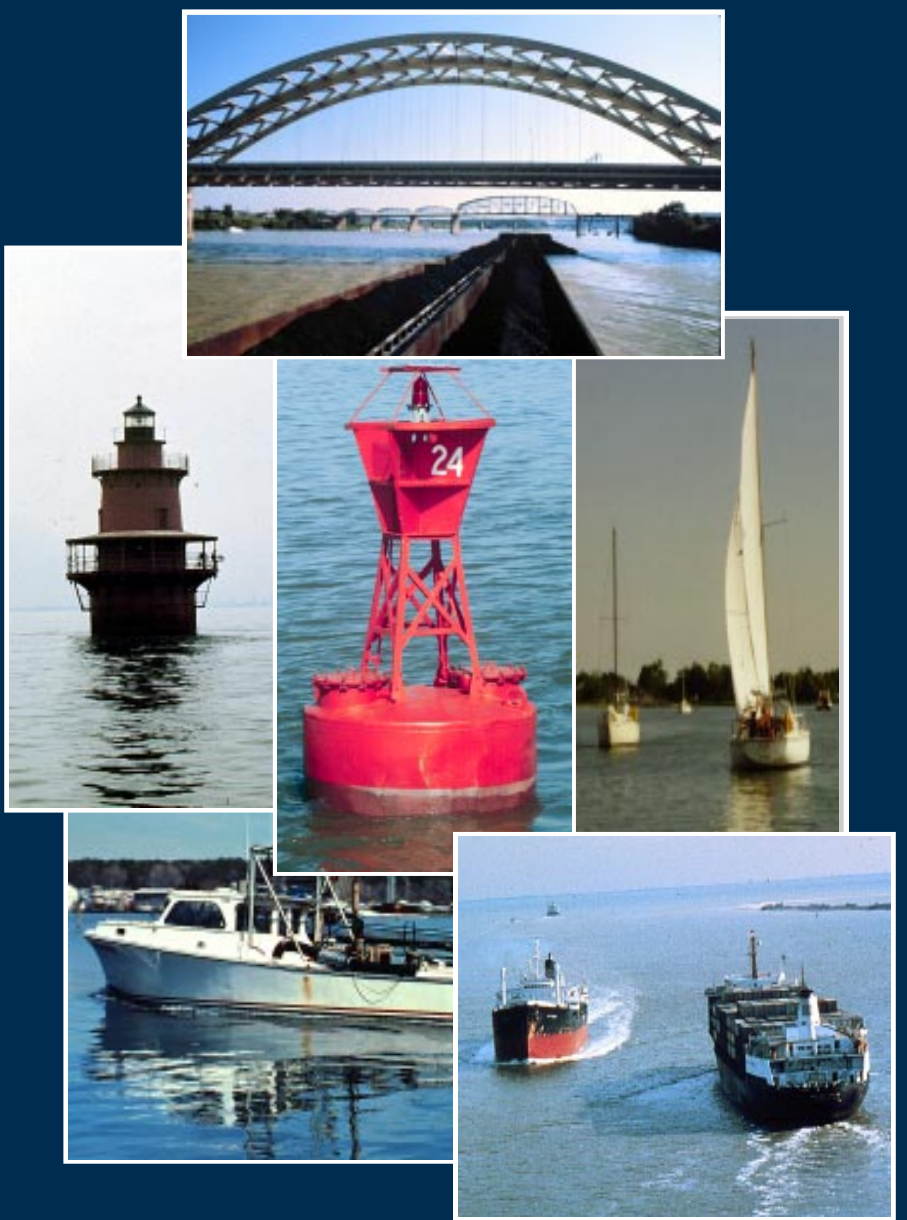
Leading the World in Navigation Excellence



U.S. Coast Guard
Navigation Center

U.S. COAST GUARD NAVIGATION CENTER
DGPS GPS
LORAN-C RADIOBEACONS OMEGA
SERVING THE WORLD

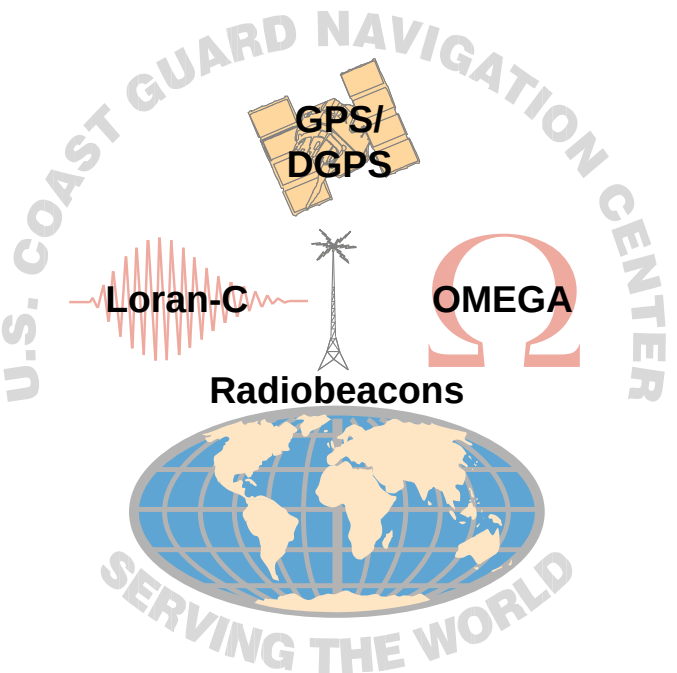
INTO THE TWENTY-FIRST CENTURY...

Introducing U.S. Coast Guard Navigation Center

The U.S. Coast Guard Navigation Center (NAVCEN) provides quality navigation services that promote safe transportation, support the commerce of the United States, and directly benefit world-wide international trade. As a Center of Navigation Excellence, NAVCEN is proud to be at the forefront of United States transportation and navigation initiatives, leading the nation and the international maritime communities into the Twenty-First Century.

Radionavigation Services

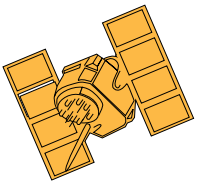
NAVCEN controls and manages Coast Guard radionavigation systems from two sites: Alexandria, Virginia and Petaluma, California. NAVCEN provides worldwide users with reliable navigation signals and timely operational status of:



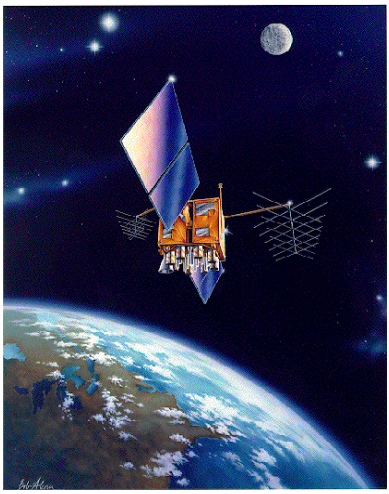
Information Services

The Coast Guard's Navigation Information Service (NIS), operated by NAVCEN, provides one-stop shopping for all radionavigation system user needs. The NIS is staffed 24 hours a day and provides information in a wide range of media. NAVCEN also administers the Department of Transportation's Civil GPS Service Interface Committee (CGSIC), the recognized forum for civil GPS information.

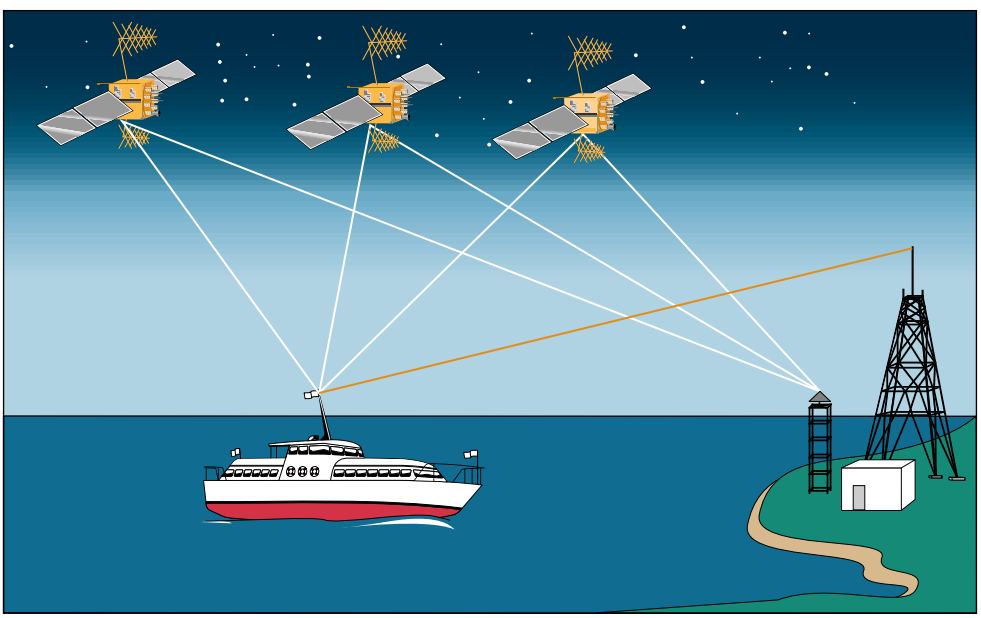
GPS/DGPS



GPS is a satellite-based radionavigation system developed and operated by the U.S. Department of Defense. GPS permits land, sea, and airborne users to determine their three dimensional position, velocity, and time, 24 hours a day in all weather, anywhere in the world. The civil GPS system has a predicted accuracy of less than 100 meters (a more precise positioning signal is available to DoD and other qualified organizations). The U.S. Coast Guard has developed an augmentation to GPS called Differential GPS.

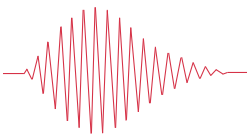


NAVCEN operates the DGPS service, consisting of two control centers and approximately 50 remote broadcast sites. The DGPS service broadcasts a correction signal on maritime radiobeacon frequencies to improve the accuracy and integrity of the GPS positions. DGPS-equipped receivers provide 10 meter accuracy, especially benefiting harbor and harbor approach navigation. Coverage areas include U.S. coastal areas, Great Lakes, Puerto Rico, most of Alaska and Hawaii, and portions of the Mississippi River Valley. Many foreign nations are implementing standard DGPS service modeled after the Coast Guard's system to significantly enhance maritime safety in their critical waterways.

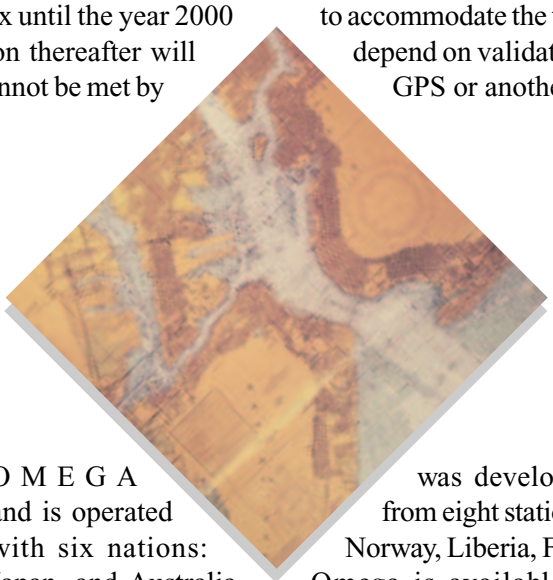


...TO PROVIDE QUALITY SERVICES...

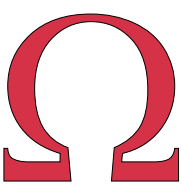
Loran-C



Loran-C was originally developed to provide radio-navigation service for U.S. coastal waters. The Loran-C system was expanded to include both full continental U.S. coverage as well as most of Alaska. The 24 U.S. Loran-C stations work in partnership with Canadian and Russian stations to also provide coverage in Canadian waters and the Bering Sea. Within published coverage areas, Loran-C provides suitably equipped users with 0.25 nautical mile absolute accuracy. Using Loran-C in the time difference repeatable mode, users can return to previously determined positions with up to 50 meters repeatable accuracy. The system is expected to remain part of the radionavigation mix until the year 2000 to accommodate the transition to GPS. Continued operation thereafter will depend on validating requirements for Loran-C that cannot be met by GPS or another system.



OMEGA



OMEGA was developed by the U.S. and is operated from eight stations in partnership with six nations: Norway, Liberia, France, Argentina, Japan, and Australia. Omega is available continuously, world-wide, both day and night. NAVCEN is responsible for the operation and maintenance of the system. This system is principally used for oceanic navigation and for non-navigation applications such as tracking weather balloons. The accuracy of OMEGA is 2-4 miles depending upon geographical location and direction of travel, stations used, signal propagation anomalies, season, time of day, and receiving equipment. The U.S. expects to continue OMEGA operations until September 30, 1997. Continued operation after that date will depend upon validating requirements for OMEGA that cannot be met by GPS or another system.

...AND PEOPLE MAKE THE DIFFERENCE.

NIS

NAVCEN is constantly seeking to educate the public and respond to the information needs of the maritime community in order to enhance waterway safety. To accomplish this, NAVCEN operates the Navigation Information Service (NIS). Through operation of the NIS, NAVCEN provides the public with information on navigation systems and other waterways safety topics. This 24-hour service uses the latest computer and Internet technologies to gather, process, and disseminate timely information. Information provided by the NIS includes GPS (Global Positioning System), DGPS (Differential Global Positioning System), Loran-C, and OMEGA operational status and safety broadcasts, and the Local Notice to Mariner (LNM). The LNM is the primary means for disseminating information concerning aids to navigation, hazards to navigation, and other marine information items of interest to mariners on the waters of the United States, its territories and possessions. LNMs are essential for all navigators to use in updating their local charts, Light Lists, Coast Pilots, and other nautical publications.

Local Notice to Mariners

- Channel conditions
- Obstructions
- Hazards to navigation
- Dangers
- Restricted areas
- Regattas
- Bridge construction & modifications
- Establishment or removal of drill rigs and vessels
- Anchorages

CGSIC

NAVCEN coordinates and manages the Civil GPS Service Interface Committee (CGSIC) as part of the Department of Transportation's initiative to integrate GPS use into civil sector applications. CGSIC is the recognized world forum for effective interaction between civil GPS users and the U.S. GPS authorities. CGSIC comprises representatives from private, government, and industry user groups, both U.S. and international. This committee meets semiannually and is open to all those interested in civil GPS issues. A Summary Record of each meeting is available from the NIS.

FOR ADDITIONAL INFORMATION:

If you would like to comment on any of the services provided by the NIS, or ask questions about present or future services, this is how to reach us:

Write to:

Commanding Officer (NIS)
US Coast Guard Navigation Center
7323 Telegraph Road
Alexandria, VA 22315-3998
Telephone: (703) 313-5900
Fax: (703) 313-5920

To Contact the BBS, call:

Telephone: (703) 313-5910

Modem speeds of 300 to 28,800 bps and most common U.S. or international protocols are supported. Communication parameters should be set to: 8 data bits, No parity, 1 stop bit, asynchronous comms, full duplex.

INTERNET

Users can access the NIS at:

http://www.navcen.uscg.mil
or
ftp://ftp.navcen.uscg.mil

Fax on Demand (FOD)

Navigation Information is available on a Fax on Demand System 24 hours a day at:

Telephone: (703) 313-5931/5932

NIS 24-Hour GPS/OMEGA Recording

GPS: Telephone (703) 313-5907
OMEGA: Telephone (703) 313-5906

WWV/WWVH Radio Broadcasts

Users can hear WWV broadcasts by telephone or radio at 14-15 minutes past the hour and WWVH at 43-44 minutes past the hour.

Radio frequencies: 2.5, 5, 10, 15, 20 MHz
Telephone: (303) 499-7111

Boating Safety Infoline

Call Infoline operators for information on boating safety recalls, to report possible defects in boats, to comment on USCG boarding procedures, for answers to boating safety questions, or for boating safety literature.

Telephone: 1-800-368-5647

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